

DRAFT

ENVIRONMENTAL ASSESSMENT

**A PROPOSAL TO TRANSLOCATE WHOOPING CRANES FROM A DISCONTINUED
NON-ESSENTIAL EXPERIMENTAL
POPULATION (NEP) IN CENTRAL FLORIDA TO AN ONGOING NEP IN
SOUTHWESTERN LOUISIANA**

June 2017

U.S. Fish and Wildlife Service
Region 4 in cooperation with Region 2

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Abstract: This environmental assessment considers the biological, environmental, and socioeconomic effects of translocating whooping cranes between a discontinued non-essential experimental population (NEP) of whooping cranes (*Grus Americana*) in central Florida (Kissimmee Prairie) to an active NEP in Vermilion Parish, LA. This action is proposed by the Whooping Crane Recovery Team to contribute to the long-term recovery of the endangered whooping crane. The Florida Fish and Wildlife Commission (FWC), the Louisiana Department of Wildlife and Fisheries (LDWF) and the U.S. Fish and Wildlife Service (Service) would be cooperating in this endeavor. Alternatives considered in this environmental assessment are: (1) No action; (2) Remove whooping cranes from a discontinued NEP in central Florida and place them in captivity (3) Remove whooping cranes from a discontinued NEP in central Florida in order to support a more successful NEP in southwestern Louisiana (Preferred Alternative). Since the central Florida NEP experienced a high rate of mortality and low reproductive success related to habitat conditions, predation, and powerline strikes, the Recovery team decided to discontinue releases in 2005.

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1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The Whooping Crane was first listed an endangered species in 1967, under the law that preceded the current Endangered Species Act (ESA) (32 FR 4001, March 11, 1967). The whooping crane is an endangered species found only in North America. Reasons for decline and ultimately listing of the species included hunting and specimen collection, human disturbance, and conversion of the primary nesting habitat to hay, pastureland, and grain production (Allen 1952, Erickson and Derrickson 1981). Using two independent techniques of population estimation, Banks (1978) derived estimates of 500 to 700 whooping cranes in 1870. By 1941, the migratory population contained only 15-16 individuals. Whooping cranes now total approximately 634 individuals, including 473 individuals in four wild populations and 161 individuals in captivity at twelve locations.

The whooping crane is still vulnerable to extinction in the wild. The species adheres to ancestral breeding areas, migration routes, and wintering grounds, leaving little possibility of pioneering into new regions. The existing wild populations are expected to continue utilizing their present habitats with little likelihood of expansion, except locally.

The only self-sustaining, natural wild population nests in and around Canada's Wood Buffalo National Park and winters along the Texas Gulf Coast in and near Aransas National Wildlife Refuge (NWR). It is referred to as the Aransas - Wood Buffalo Population (AWBP) and consisted of approximately 329 birds in the winter of 2015. This population experiences a growth rate of approximately four percent per year (FWS 2012). However, the restricted winter range of this population leaves it vulnerable to extirpation by catastrophic events like a hurricane, red tide, severe drought, or a contaminant spill that could destroy their habitat, eradicate their food resources or kill the birds directly as a result of ingestion of toxins. The principal threat to the wild population continues to be a contaminant spill along the Gulf Intracoastal Waterway that bisects the winter range. A spill could destroy and /or degrade habitat and affect the whooping crane adversely.

The second wild population is the Eastern Migratory Population. Releases began in 2001 and the population currently numbers 104 individuals, which includes 48 females, 54 males, two unknown, and 27 pairs. This population is found in the eastern U.S. and breeds in Wisconsin, and winters from Indiana, Kentucky, and Tennessee south through Alabama, Georgia, and Florida. The Eastern Migratory Population is designated as a NEP and is part of an ongoing reintroduction effort.

The third wild flock, the Florida non-migratory NEP, is located in the Kissimmee Prairie region of central Florida. Facilitated by the Florida Fish and Wildlife Commission (FL FWC), the project consisted of 289 whooping crane releases from 1993 to 2004, yet only 14 birds remain today. This reintroduction effort to establish a resident population on the Kissimmee Prairie in central Florida was not successful, as it experienced a high rate of mortality and low reproductive success related to habitat conditions, predation, and powerline strikes. Releases were

discontinued in 2005, ecological research on this population was discontinued in 2012, and the FWC continues to monitor the remaining birds' locations.

The fourth wild flock was initiated in 2011 with the establishment of the Louisiana non-migratory NEP. To date, 100 whooping cranes have been released into southwestern Louisiana, and 59 survive today, including the first wild-hatched chick in 2016.

Biologists at the Patuxent Wildlife Research Center began a captive breeding program in 1966 by using eggs from the nests of the wild Aransas Wood Buffalo Population. Cranes raised from these eggs and their offspring form the nucleus of the captive breeding flock, now located at five breeding facilities. The captive breeding population numbers about 161 individuals.

For further information on the status, history and ecology of the species, see the International Recovery Plan for the Whooping Crane (Recovery Plan) (Canadian Wildlife Service and U.S. Fish and Wildlife Service, 2007).

1.2 Purpose

The Recovery Plan (Canadian Wildlife Service and U.S. Fish and Wildlife Service, 2007) identified a recovery objective of at least 40 nesting pairs in the only natural wild flock, plus the establishment of two additional wild populations of 25 nesting pairs each within the species' historic range. These populations must be sustained for a minimum of 10 years, in order to downlist the whooping crane to threatened. These populations can be either migratory or non-migratory.

At the recommendation of the Recovery Team, the Service in partnership with the Florida Fish and Wildlife Conservation Commission (FWC) and Louisiana Department of Wildlife and Fisheries (LDWF) proposes a new strategy to conserve the endangered whooping crane. Whereas reintroduction efforts were previously supported by captive-reared cranes, this document evaluates the proposed use of wild-hatched and reared cranes from reintroduced populations to facilitate other reintroduction efforts. The Service, in collaboration with state partners, proposes to move whooping cranes from the central Florida NEP, where reintroduction efforts have been discontinued, and translocate them to the southwestern Louisiana NEP where there is a better chance of reproductive success and lower mortality. This method of transferring birds among NEPs would support the Recovery Plan objective of establishing two wild self-sustaining populations within the whooping crane's historic range. That objective must be met before any consideration of reclassifying the species to threatened.

The purpose of this Environmental Assessment is to evaluate the available alternatives and determine the best technique (translocation or no action) to satisfy the recovery objective, and determine whether that alternative would significantly impact the human environment.

1.3 Need

The vulnerability of the whooping crane in the wild illustrates the need for establishing additional self-sustaining wild populations isolated from the existing wild Aransas-Wood Buffalo Population (AWBP). Mixing with the wild AWBP is not permissible, so all NEPs must be geographically isolated from the AWBP.

The Whooping Crane reintroduction program in Louisiana has been largely successful since its establishment in 2011 with 10 captive-reared juvenile cranes. Ten to 16 cranes were added to this population annually, and 25 were released in 2016, which now totals 59 in the wild. The whooping cranes exhibit high adaptability to the extensive coastal wetlands and agriculturally dominated landscape. In early 2016, a pair nesting in a crawfish pond hatched two chicks, representing the first wild-hatched cranes in Louisiana since 1939. The population also exhibited increased nesting activity, with five pairs making nine nest attempts. The Louisiana reintroduction project can cater to larger cohorts (25-36 birds) annually using existing release pens at White Lake Wetlands Conservation Area (WLWCA) and a new release pen at Rockefeller Wildlife Refuge.

Due to the survival and reproductive issues faced by the Florida Non-Migratory NEP, it is highly unlikely that reproduction in wild-hatched Florida whooping cranes will ever achieve production rates adequate for success. If reproductive issues can be overcome, the Eastern Migratory Population has the potential to become one of two self-sustaining wild populations needed to move the species toward recovery. The early successes of the Louisiana non-migratory flock indicate that it may also become a self-sustaining wild population, helping to move the species as a whole toward downlisting and recovery. Translocating the 14 remaining Florida NEP whooping cranes will allow for the enhanced possibility of successful breeding, and make the Louisiana NEP more robust. This translocation would open the possibility for the discontinued Florida NEP to make a meaningful biological contribution to the Louisiana NEP.

1.4 Decision that Must be Made

The Service must decide whether to translocate whooping cranes among NEPs, and which alternative would best accomplish that objective. Removal of cranes from Florida and subsequent translocation to Louisiana would be an opportunity to implement a new release method and support the recovery effort. The Service's Regional Director of the Southeast Region also must determine whether that alternative would result in a significant impact to the human environment, thereby requiring an Environmental Impact Statement, or if a Finding of No Significant Impact (FONSI) is appropriate.

1.5 Issues and Concerns

A concern related to removal of whooping cranes from their occupied range in Florida is that it might have potential economic effects. For example, the tourism industry and bird watching community in Florida could potentially perceive the translocation to Louisiana negatively due to the removal of whooping cranes.

Another concern is the effect of introducing a large number of whooping cranes in Louisiana. A greater number of whooping cranes may affect the availability of forage, but no degradation of these resources is anticipated due to the wide range of these birds and relatively small number of birds that would be translocated.

1.6 Scoping

The use of wild-reared cranes as a source for reintroduction efforts has been discussed, but has yet to be implemented as an action for the recovery of the species. The method of translocating whooping cranes among NEPs to improve the species status would be implemented by transporting what remains of the Florida population to Louisiana. A non-migratory population of whooping cranes historically occurred in southwestern Louisiana near White Lake (Allen, 1952). About 13 individuals existed in 1939, but a hurricane in 1940 led to loss of about half the population. The last individual was captured and moved to Aransas NWR in 1950. Since 2011, cranes have been reintroduced into Louisiana.

Scoping for the proposed action involved extensive consultation with the Louisiana Department of Wildlife and Fisheries (LDWF), the International Whooping Crane Recovery Team, The U.S. Fish and Wildlife Service North Florida and Louisiana Ecological Services Offices, and the FL FWC. As releases into the Florida population were discontinued in 2005 and intensive monitoring was discontinued in 2012, these agencies and the Recovery Team sought a conservation method that would save the remaining Florida whooping cranes while still supporting the recovery of the species. Conversations among these agencies, and with other whooping crane experts across the country, led to the proposition of translocation among NEPs as a viable recovery method.

The cranes have adapted very well to the extensive coastal wetlands at WLWCA in Louisiana. Due to the recommendation by the Whooping Crane Recovery Team for the addition of larger cohorts to Southwestern Louisiana, an additional release site was established 19 miles to the south at Rockefeller Wildlife Refuge, where releases began in 2016.

2.0 ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

This chapter first discusses the alternatives considered but not studied in detail, then describes the status of the whooping crane if no reintroduction action is taken (No Action Alternative). Alternative 1 is No Action. Alternative 2 is to move whooping cranes from the discontinued Florida NEP into captivity. Alternative 3, is to translocate the whooping cranes from the central Florida NEP and move them to the Louisiana NEP in order to support the recovery effort to establish two additional populations outside the AWBP. This alternative is the Service's preferred alternative.

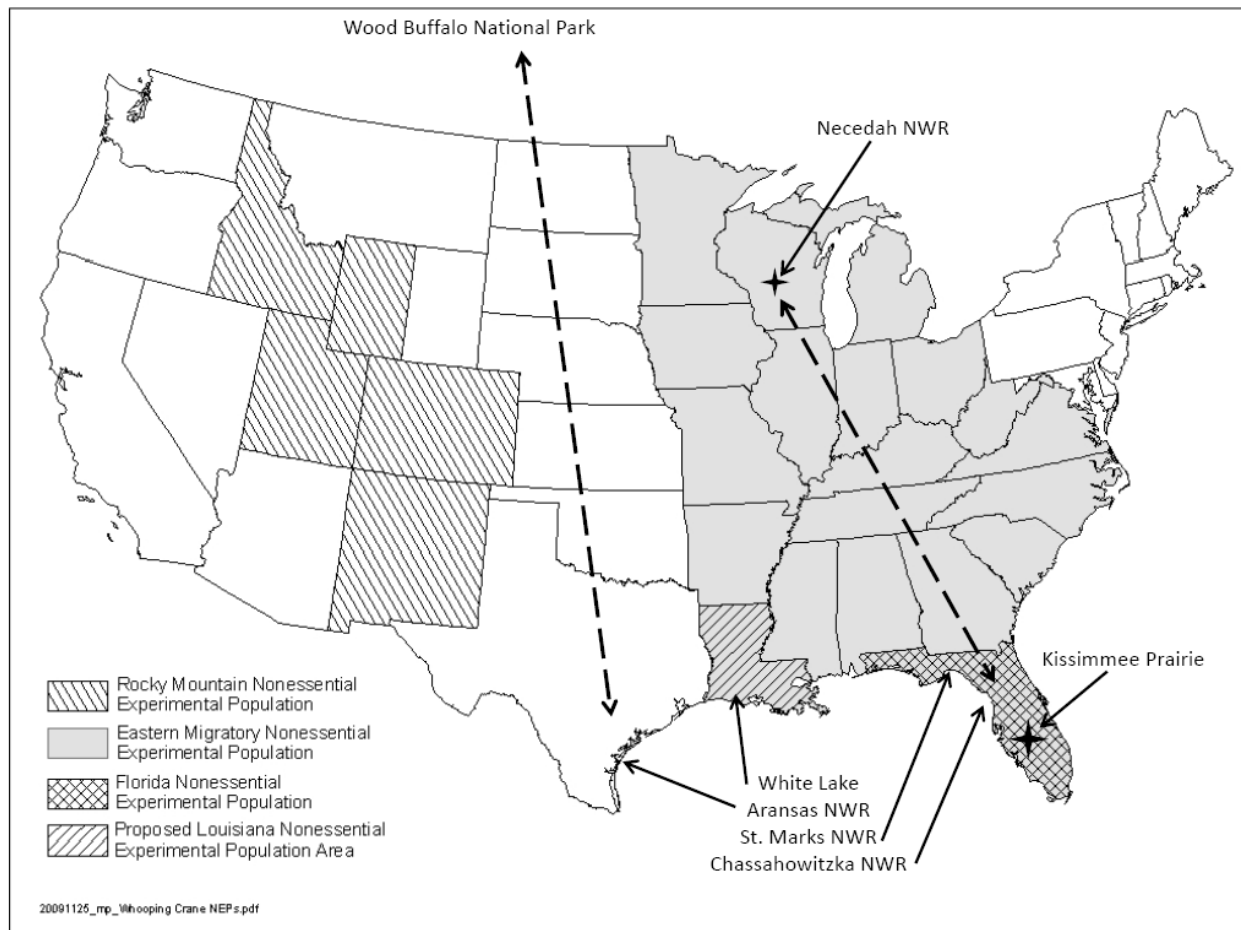


Figure 1: Whooping crane population locations

Map depicts Louisiana non-migratory whooping crane Nonessential Experimental Population (NEP) area; Eastern Migratory NEP; Florida non-migratory NEP; Rocky Mountain NEP. This map depicts the Louisiana non-migratory population release site of White Lake Wetlands Conservation Area; the Aransas-Wood Buffalo Population's breeding area, migration route and wintering area (Aransas NWR); the core area of the Florida non-migratory Population on the Kissimmee Prairie area; and the Eastern Migratory Population's breeding area (Necedah NWR), migration route, and wintering area in Tennessee, Alabama, Georgia, South Carolina and Florida.

2.1 Alternatives considered but not studied in detail

One alternative considered was to reinitiate releasing whooping cranes into the Florida non-migratory NEP. In 2008, scientists from FL FWC and major project partners conducted a workshop to assess the current status and potential for success of establishing the resident, non-migratory NEP of whooping cranes in Florida. The Recovery Team used the workshop findings and other considerations, and in 2009 recommended there be no further releases into the Florida flock. The water regimes produced by periodic droughts in Florida make it extremely unlikely that reproduction in wild-hatched Florida whooping cranes will ever achieve production rates adequate for success. For this reason, this alternative will not be analyzed further.

2.2 Alternatives Studied in Detail

The alternatives include: (1) no action; (2) Move wild whooping cranes from the discontinued central Florida NEP into captivity (3) translocate the cranes from the discontinued central Florida NEP to the Louisiana NEP in order to support the broader recovery effort for whooping cranes (Preferred Alternative).

2.2.1 Implementation Techniques Common to Alternatives

Capture wild cranes through hand capture; using a feed trough blind or other baiting strategy (Folk et al 2005) are the most commonly used methods in the Florida reintroduction efforts. Other capture techniques that may be employed involved snares and nets. Captures will likely take place in early mornings, when the cranes are hungry and temperatures are cool (Folk et al 2005). As cranes are opportunistic feeders that often utilize livestock troughs, this method has proven effective in Florida, where a hidden biologist will grasp the crane by the leg as it comes to feed at the trough, until it can be safely restrained (ibid). The biggest challenge to the implementation of this method is the period involved in capturing the birds – it may take weeks between the initiation of baiting and when a capture can be attempted (ibid).

2.2.2 Alternative 1 - *No action*

The Service would not capture any wild-reared cranes from the Florida NEP. The majority of recovery activities would be concentrated on conservation of the Aransas Wood Buffalo Population, releases in the nonessential experimental Eastern Migratory Population, and ongoing monitoring and reintroductions of the existing Louisiana NEP. The 14 Florida cranes would be left in place and monitored until they are lost.

2.2.3 Alternative 2 – *Move wild whooping cranes from the discontinued Florida NEP into captivity*

The Service would move wild Florida NEP whooping cranes into captivity. The Service would capture the cranes from the Florida NEP, and integrate them with captive populations. This alternative would support captive populations. However, this is not a desired alternative because the existing NEP birds are all descended from captive birds, and therefore would not augment the gene pool. Moving wild-cranes into captivity is also very stressful for the birds.

2.2.4 Alternative 3 (Preferred Alternative) – *Translocate whooping cranes from the discontinued Florida NEP into the Louisiana NEP.*

The Service proposes to capture whooping cranes from the discontinued Florida NEP, and release them into the Louisiana NEP. The Florida cranes would be “hard” released into the wild, in order to reduce the stress of being in captivity for extended periods. Food will not be provided to the cranes, and they will be kept in a top-netted pen for a very short time prior to the release, to allow for banding and health checks. Data on survival of released birds, movements, behavior, and causes of losses, reproductive success, and other information will be gathered throughout the project. Project progress under this alternative would be evaluated annually.

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

Alternative 1, No Action, has no specifically identifiable environmental impacts. Environmental details for Alternative 2, moving wild Florida NEP whooping cranes into captivity, will not have identifiable effects on the environment, as they will be in controlled facilities. Alternative 3, which involves translocating the Florida NEP cranes to the Louisiana NEP, is not projected to negatively affect the environment from which the cranes are removed. The Service will provide justification for such actions. In the case of Florida, a structured decision making process was completed that weighed environmental, biological, and economic costs and benefits of various alternatives (Converse et al 2013). For example, the environment in Florida is not suitable to support a population of whooping cranes, indicated by the high mortality related to predation, powerline collisions, drought, and low water levels in breeding areas.

The original southwestern Louisiana NEP release area approved under Service’s 2011 Environmental Assessment was White Lake Wetlands Conservation Area (WLWCA). WLWCA along with the recently approved Rockefeller Wildlife Refuge (Rockefeller) comprise the area affected in Alternative 3. The description of Affected Environment in sections 3.0 through 3 is focused on the Release Area at the WLWCA and Rockefeller in southwestern Louisiana. The information contained in these sections is taken from the Draft Management Plan for White Lake’s Wetlands (LDWF 2002)

Previous research indicated that whooping cranes released in southwestern Louisiana will remain in the vicinity of the release sites in subsequent years (Drewien and Bizeau 1977; Nesbitt 1982; Nesbitt 1988). Whooping cranes tend to disperse from their natal site when searching for a mate and males, but have a stronger homing tendency towards establishing their nesting territory near the natal area (Drewien et al. 1989). When young captive-reared birds are released at a wild location, the birds appear to view the release site as a natal area. If they do, females would

disperse away from the release site in their search for a mate. In these circumstances it is useful to have the additional site at Rockefeller Refuge in order to provide a larger territorial distribution of males. Although the movement of cranes in Louisiana is widespread, the birds always return to their nesting territory, according to the 2016 LDWF Report on the Louisiana NEP. However, individuals from each of the first five release cohorts have flown into Texas, and typically return to Louisiana within a few days.

3.1 Location

Florida

Low population numbers, predation, disease, reproductive issues, habitat suitability, and habitat modification threaten the survival of the central Florida NEP. Today, the Florida NEP is in danger of extirpation, with only 14 cranes remaining. The following section gives an overview of the location from which whooping cranes would be captured in Florida, for translocation to Louisiana.

The Kissimmee Prairie region of Central Florida supports thousands of hectares of shallow freshwater marsh and open grasslands in Osceola and Polk counties (Nesbitt et al 1997). Marshes in this area are dominated by pickerelweed (*Pontederia cordata*) and maidencane (*Panicum hemitomon*). The grasslands in the Kissimmee Prairie region are predominately managed for grazing livestock. Although this region supports a stable population of non-migratory sandhill cranes, whooping cranes were unsuccessful in adapting to this landscape due to a combination of predation and poor nesting conditions due to periodic drought. Attempts were made to modify the release techniques, broaden the release area, and minimize powerline strike mortalities, but these efforts did not produce additional success in supporting this population.

After 15 years, a structured decision making analysis involving FWC and multiple stakeholders in this recovery effort, along with the Whooping Crane Recovery Team, led to the decision to permanently discontinue the overall NEP reintroduction efforts in Florida in 2012. The major reason for discontinuing this NEP was a low probability of achieving a self-sustaining population due to environmental factors. The droughts affected wetland conditions in Florida, and made it extremely unlikely that reproduction in wild-hatched Florida whooping cranes would ever achieve production rates adequate for success. Additional considerations included shorter-than-expected life spans, scarcity of birds for release, escalating project costs, and the loss of habitat to development. In 2005, FWC stopped releasing whooping cranes; in 2008, FWC decided to officially end the Florida non-migratory population reintroduction. All research ceased in 2012, and today the location of the 14 remaining whooping cranes are periodically checked. There were significant problems with survival and reproduction, both of which were complicated by periodic droughts. The FWC and the Recovery Team concluded that project resources and birds produced in captivity would be of greater benefit to other whooping crane releases as well as to maintain the captive flock.

The suitability of southwestern Louisiana for reintroduction of whooping cranes was established in the final rule “Establishment of a Nonessential Experimental Population of Endangered Whooping Cranes in Southwestern Louisiana” (76 FR 6066-6082). Refer to this document for

information on the release site in Louisiana. Extensive agricultural and coastal wetlands in Louisiana provide ample foraging habitat, reducing the risk of predation by nesting on dry ground experienced in Florida. The availability of suitable habitat in Louisiana, in addition to the large number of cranes from that NEP now reaching reproductive age, provides the best opportunity to help the Florida cranes survive in the wild.

Louisiana

The WLWCA is inland and is buffered from the coast by more than 24 kilometers (15 miles) of the Chenier plain and ridges and coastal marshes. It is part of the area historically occupied by a non-migratory, breeding population of whooping cranes (Allen 1952; Gomez 1992) and has been the principal release area since 2011 (Figure 2). This 70,965 acre tract, located along the western boundary of Vermilion Parish, is bounded on the south by White Lake and the central northern boundary is 12 kilometers (7.5 miles) south of the town of Gueydan. The property is 52 kilometers (32 miles) southwest of Lafayette and 64 kilometers (40 miles) southeast of Lake Charles. The southern boundary of the property is 28 kilometers (17.5 miles) north of the Gulf of Mexico. The property averages 19 kilometers (12 miles) from east to west and 14.5 kilometers (9 miles) from north to south.

3.2 Physical Characteristics and Land Use of WLCA and Rockefeller Wildlife Refuge

Two release sites are used in the Louisiana whooping crane reintroduction, WLWCA and Rockefeller Wildlife Refuge (Rockefeller). The WLWCA is located within the Mermentau Basin. Natural drainage within the basin has been interrupted by manmade features. The major source of hydrological change in this basin has been the conversion of two estuarine lakes (Grand and White Lakes) into freshwater reservoirs for agricultural (rice) irrigation in the surrounding areas. Land ownership adjacent and near WLWCA includes seven large private tracts of land totaling 133,559 hectares (330,038 acres) and four large public land areas (including White Lake) totaling 80,313 hectares (198,459 acres) (Table 1).

WLWCA is 28,718 hectares (70,965 acres) comprised of 21,078 hectares (52,085 acres) of fresh marsh and 7,640 hectares (18,880 acres) of agricultural land. These habitats include wetlands associated levees, shoreline and natural ridges, and agricultural lands managed for rice, rangeland, and crawfish aquaculture. Hunting is permitted on the property and is managed indirectly through leases or directly through a company run hunting camp. WLWCA (formerly known as the Standolind Tract) was owned and managed by BP America Production White Lake until 2002 when they donated the property to the state of Louisiana. At that time a cooperative Endeavor Agreement between the state of Louisiana and White Lake Preservation Inc., was executed for management of the property. In 2005, according to the terms of that agreement, the LDWF received total control for management this area.

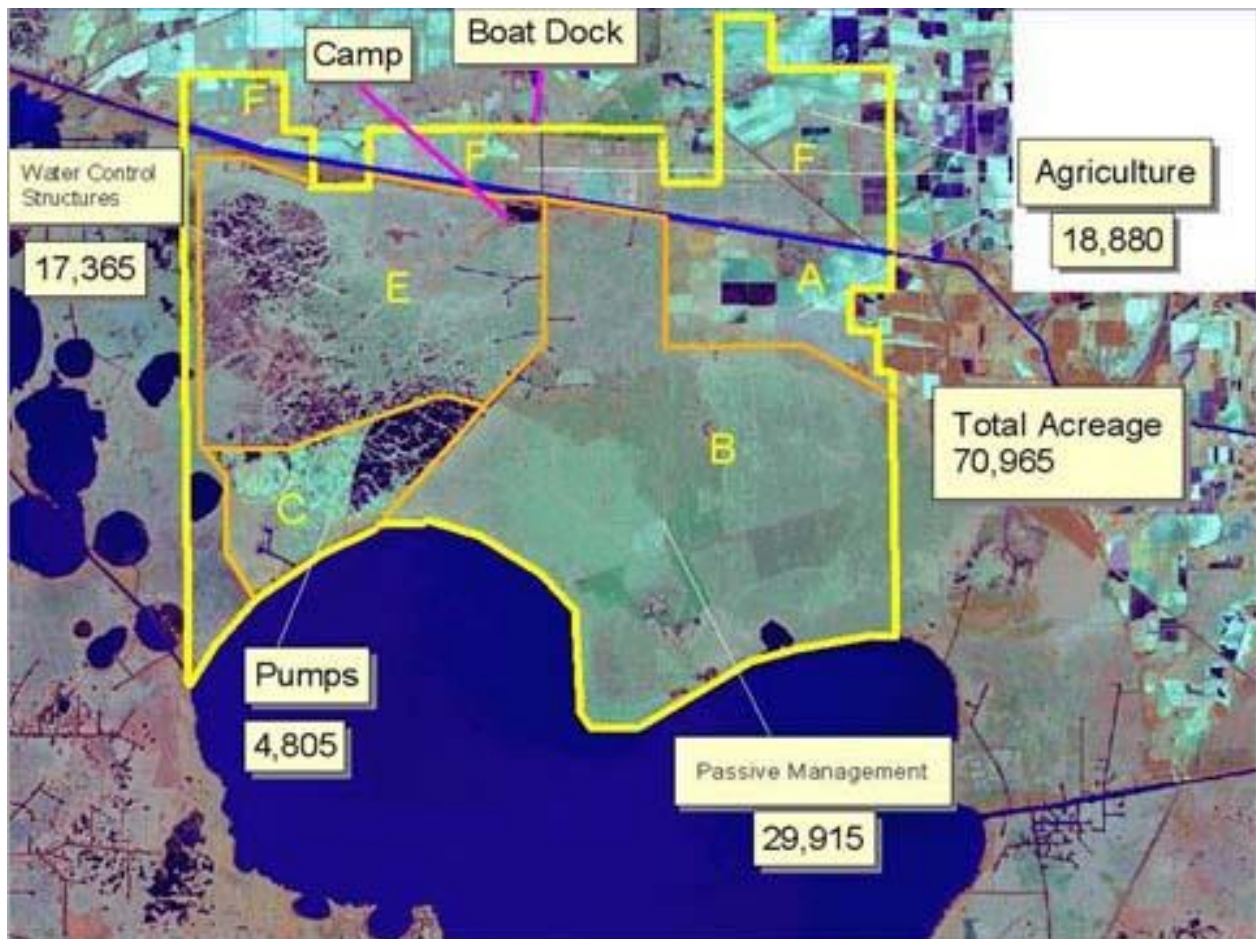


Figure 2: The White Lake Property

The second release site is located 19 miles to the south at Rockefeller Wildlife Refuge, with an area of 28,935 hectares (71,500 acres, Figure 3). Within the Mermentau Lakes and Chenier sub-basins in which Rockefeller is located, there were 319,098 acres of freshwater marsh, 141,656 acres of intermediate marsh, and 25,090 acres of salt marsh, according to the 2011 Rockefeller Wildlife Refuge Management Plan. The total area of Rockefeller is declining annually because of a high rate of shoreline erosion on its border with the Gulf of Mexico. The refuge is a flat and largely treeless area with highly organic soils. These soils produce abundant emergent vegetation and submerged aquatics, which in turn provide ample feed for water fowl (LDWF 2016). Rockefeller's historic freshwater marsh was vegetated by bulrush (*Scripus californicus*), giant cutgrass (*Zizaniopsis miliacea*), sawgrass (*Cladium mariscus*), and cattail (*Typha spp.*). The Refuge borders the Gulf of Mexico for 26.5 miles, and is owned by the Louisiana Department of Wildlife and Fisheries (LDWF). There are also a number of water control structures managed to enhance marsh health and waterfowl food production (Folk et al 2005). Historically, Rockefeller freshwater marshes consisted of deep freshwater rush marshes, bordered on the north by the Grand Chenier Ridge and to the south by sea rim beach. Natural

drainage from precipitation in the Mermentau Basin would flood the marshes at Rockefeller, a condition which current water management practices are designed to restore.

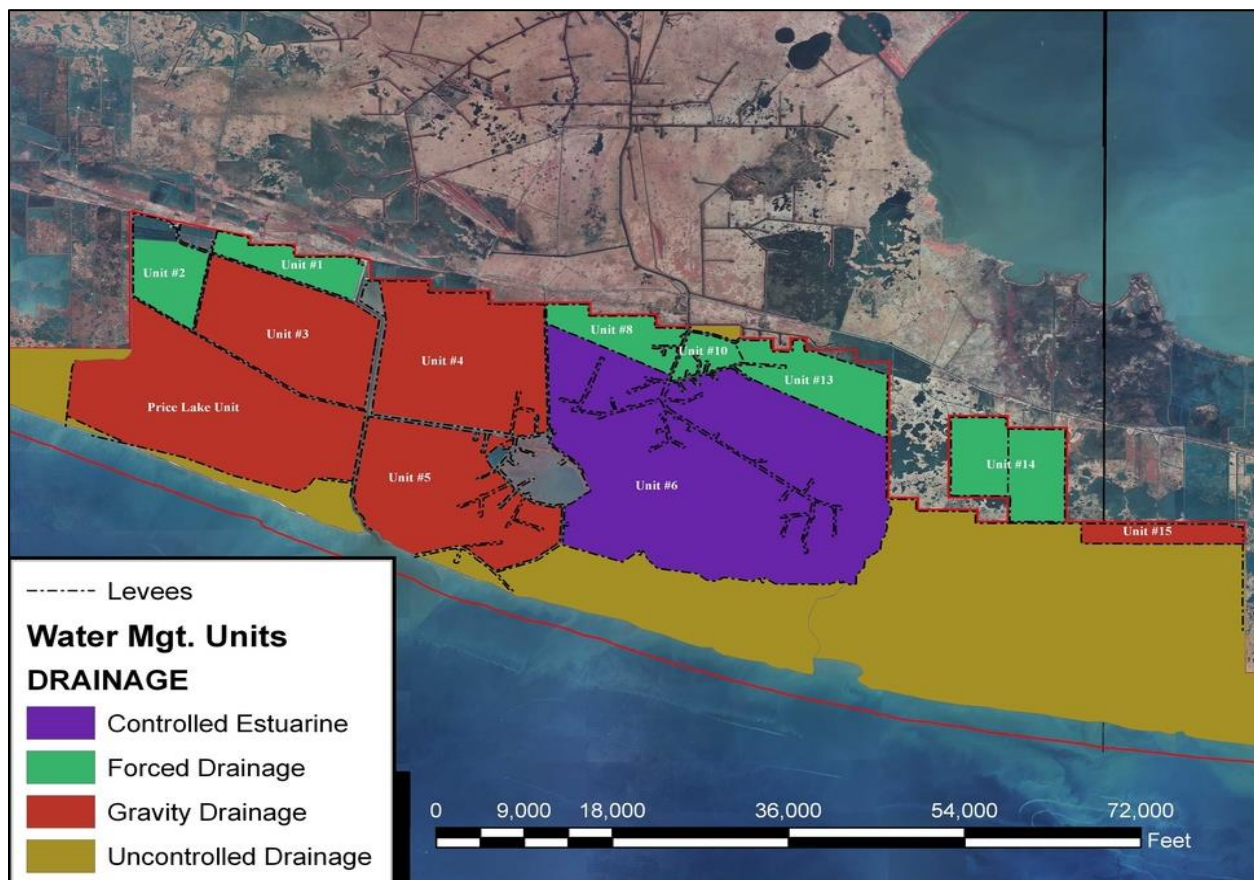


Figure 3: Rockefeller Wildlife Refuge

Figure 3 displays 12 management units in the Refuge which total 43,000 of the total 71,500 acres. Rockefeller staff use over 40 water control structures, 200 miles of levees, and prescribed marsh burning to conserve natural vegetation, stabilize water levels, and manage salinity levels in the water. Brackish marsh dominates the water management units closer to the Gulf of Mexico, and intermediate marsh is present on the northern edge of the refuge.

Approximately 19 kilometers (30 miles) west of Rockefeller is Cameron Prairie NWR, 10,027 hectares (24,777 acres); and approximately 13 kilometers (20 miles) west is Lacassine NWR, 10,795 hectares (26,675 acres). The area north of Rockefeller is primarily agriculture although it was historically the panicum (paille fine) marsh that Allen (1952) reported as being used by whooping cranes, and is in fact frequently utilized by the NEP cranes for nesting and foraging. Non-agricultural areas surrounding Rockefeller consist of fresh to intermediate marshes, privately owned property and is primarily used for waterfowl hunting, alligator hunting, and alligator egg collection for farms. Oil and gas exploration and production is one of the major industries in the region.

Table 1: Size in hectares and acres of large private and public land holdings at and near the White Lake Wetlands Conservation Area

(LDWF 2010)

Landowner	Hectares	Acres	Land Classifications
Miami Corporation*	67,783	167,499	Wetland
Vermilion Corporation*	48,681	120,296	Wetland
Florence Club*	2,014	4,977	Wetland, Agriculture
Lacassine Land Company*	8,312	20,539	Wetland, Agriculture, Cattle
Coastal Club*	2,443	6,036	Wetland
Cherry Ridge Land Company*	1,215	3,003	Wetland
Lake Arthur Club*	3,111	7,688	Wetland
Private Lands Total	133,559	330,038	Wetland, Agriculture, Cattle
Lacassine NWR**	10,795	26,675	Wetland, Agriculture
Cameron Prairie NWR**	10,027	24,777	Wetland, Agriculture
Rockefeller State Wildlife Refuge**	28,935	71,500	Wetland
White Lake Wetlands Conservation Area**	28,718	70,965	Wetland, Agriculture, Cattle
Public Lands Total	80,313	198,459	Wetland, Agriculture, Cattle
Total	213,872	528,497	Wetland, Agriculture, Cattle

*Private

**Public

3.3. Biological Environment

This section presents a general description of the environment that would be affected by the proposed action.

3.3.1. Vegetation

The WLWCA property is composed of six management units (Figure 2). Two tracts, A and F are agricultural land, total 7,640 hectares (18,880 acres) and represent 26 percent of the property. The remaining 21,078 hectares (52,085 acres) are fresh marsh and contained in four tracts, B, C, D, and E. The management emphasis placed on this land is for the benefit of wildlife species. The diversity of habitats adds to the overall productivity of the tract. These habitats include wetlands, associated levees, shoreline and natural ridges, and agricultural lands managed for rice, rangeland, and aquaculture.

Species composition in Tract C, the sanctuary (impoundment- pump out) included the following: maiden cane/paille fine marsh (*Panicum hemitomon*), bull tongue (*Sagittaria sp.*), Walter's millet (*Echinochloa walteri*), sprangletop (*Leptochloa fascicularis*), slender fimbry (*Fimbristylis autumnalis*), bullwhip (*Scirpus californicus*), southern swampplily (*Crinum americanum*), sawgrass (*Cladium jamaicense*), and rattlebox (*Daubentonia texana*).

Species composition in Tract E, (gravity flow water control) included the following: maiden cane, bull tongue, southern swampily, buttonbush (*Cephalanthus occidentalis*), spikerush (*Eleocharis equisetoides*), water-shield (*Brasenia schreberi*), white water lily (*Nymphaea odorata*), and frog-bit (*Limnobium spongia*).

Species composition in Tract B, large passively managed marsh, on the eastern half of property south of Gulf Intracoastal Waterway included the following: maiden cane, bull tongue, cattail (*Typha latifolia*), buttonbush, southern swampily, sawgrass, spikerush, spiderlily (*Hymenocallis caroliniana*), and roseau cane (*Phragmites australis*). Additional species include: giant cutgrass (*Zizaniopsis miriacea*), coontail (*Ceratophyllum demersum*), southern naiad (*Najas quadalupensis*), Eurasian milfoil (*Myriophyllum*), fanwart (*Cabomba caroliniana*), floating heart (*Nymphoides aquaticum*), dwarf spikerush (*Eleocharis parvula*) and bladderwort (*Utricularia* sp.).

Along the shoreline of White Lake only the northwestern portion supports woody vegetation. This woody vegetation occurs on the south side of the Florence canal. This native and exotic vegetation includes: black willow (*Salix nigra*), wax myrtle (*Nyrica cerifera*), Chinese tallow (*Sapium sebiferum*), live oak (*Quercus virginiana*), swamp red maple (*Acer rubrum*), and American elm (*Ulmus americana*). The remainder of the White Lake shoreline is marsh vegetation.

Vegetation composition on levees depends on the age, elevation, and incidence of fire. Transitional vegetation, shrub, grasses, and marsh plants, occurs on the berms of levees and on reworked or burned levees in early succession. Native and exotic species along interior levees included: swamp red maple, wax myrtle, Chinese tallow, black willow, hackberry (*Celtis laevigata*), chinaberry (*Melia azedarach*), buttonbush, buckbrush (*Baccharis hamilifolia*), maiden cane, cutgrass (*Leersia oryzoides*), roseau cane (*Phragmites australis*), blackberry (*Rubus* sp.), pokeweed (*Phytolacca americana*), yankee weed (*Eupatorium compositifloium*), rattlebox, giant ragweed (*Ambrosia tritida*), iris (*Iris giganteaerula*), *Senecio tampicana*, and bullwhip.

The spoil deposition along the Gulf Intracoastal Waterway creates a man-made ridge habitat. Twenty-seven kilometers (17 miles) of this habitat occur along both sides of this major waterway from the western to the eastern boundary of the property. The vegetative cover ranges from woody overstory with dense undercover, woody over story with sparse undercover, shrub/brush/grass and a berm between spoil and marsh or spoil and agriculture. The common native and exotic species observed on these spoil banks included: sugar hackberry, blackberry, black willow, swamp dogwood (*Cornus foemina*), *Crataegus* sp., Chinese tallow, chinaberry, mulberry (*Morus* sp.), live oak, swamp privet (*Ligustrum* sp.), waxmyrtle, Japanese honeysuckle (*Lonicera japonica*), greenbriar (*Smilax* sp.), trumpet creeper (*Campsis radicans*), poison ivy (*Toxicodendron radicans*), grapes (*Vitis* sp.), pokeweed (*Phytolacca Americana*), lantana (*Lantana camara*), blackberry, elephantsear (*Colocasia antiquorum*), palmetto (*Sabal minor*), and giant ragweed.

A native prairie plant community is present on the 162 hectare (400 acres) Deer Island complex in Tract E. There is also a 364-hectare (900 acres) tract adjacent to this site that could be

managed specifically for whooping cranes with improvements including dike repair and pump to help manage water levels.

Rockefeller is home to diverse plant communities, which are separated into four distinct coastal marsh zones: fresh, intermediate, brackish, and salt marsh. Like WLWCA, Rockefeller contains marsh species such as maidencane, bulltounge, cattail, spikerush, and giant cutgrass. The Refuge is segregated into water management units (Figure 3), which are designed to replicate historic flooding conditions and encourage natural vegetation. Units 3, 4, 5, 15, and Price Lake are managed through gravity drainage and enclose brackish to intermediate marsh. The dominant aquatic species is widgeongrass (*Ruppia maritima*), and dwarf spikerush is the most abundant annual. Five impoundments (1, 2, 8, 10/13, 14) are managed with forced drainage, and support similar plant communities to the gravity drainage units. Unit 6 is managed as controlled estuarine, and contain brackish to saline marshes.

Approximately 30,000 acres have uncontrolled drainage, in areas south of Unit 6, and south and west of Price Lake. The uncontrolled drainage areas are dominated by smooth cordgrass (*Spartina alterniflora*), saltgrass (*Distichlis spicata*), and black needlerush (*Juncus roemerianus*). Ridge habitats on the northern portion of the property include live oak and hackberry.

3.3.2 Wildlife

The long-term management of a large stable fresh marsh and adjacent agricultural land make WLWCA Lake one of the most important waterfowl wintering areas in coastal Louisiana. In October 1987, the USFWS published a refined North American Waterfowl Management Plan, Category 23B, Gulf Coast. This plan ranked Central Gulf Coast habitat preservation needs for waterfowl, including the States of Alabama, Mississippi, and Louisiana. From a list of 28 sites, Louisiana's Pan Am Unit in southwestern Louisiana ranked second in order of importance. The White Lake property south of the GIWW comprised about 60% of the acreage in the Pan Am Unit. Property north of the GIWW also provides excellent waterfowl habitat. Blue-winged teal (*Anas discord*) use these marshes, especially the refuge, and agricultural land to stage prior to trans-gulf migration. The mottled duck (*Anas fulvigula*) resides on these wetlands and agricultural land year round with significant numbers staging here each September. The fulvous tree duck (*Dendrocygna bicolor*) nests and stages in these wetlands. Wood ducks (*Aix sponsa*) and black-belly tree ducks (*Dendrocygna autumnalis*) also occur on White Lake. Rockefeller provides habitat suitable for many of the same waterfowl species found at White Lake, which in addition to those listed above include greater and lesser scaup, green- and blue-winged teal, and mottled duck.

The most impressive numbers of migratory waterfowl utilizing these marshes include: mallard (*Anas platyrhynchos*), northern pintail (*A. acuta*), gadwall (*A. strepera*), green-winged teal (*A. crecla*), and blue-winged teal. The numbers of mallards using the refuge (Tract C) and the gravity flow managed unit (Tract E) are what make the White Lake property stand out as a very special area for waterfowl. Over 200,000 mallards have been observed on the refuge, along with large numbers of pintail, green-winged teal, snow geese (*Chen caerulescens*) and white-fronted geese (*Anser alibifrons*). The refuge (Tract C) is as important for mallard resting as any area in Southwest Louisiana. Tract E is likely the second most important area.

In addition to waterfowl, the WLWCA provides abundant habitat for a variety of avian species. The Natural Resources Conservation Service (NRCS), in 1997, published an aquatic and terrestrial species listing for the Mermentau River Basin. According to this list, the WLWCA will seasonally have migrant passerine birds, shorebirds, wading birds, rails, gallinules, and the common moorhen. Hawks and owls are also common. Coastal terns and gulls undoubtedly use habitat contained on the property at times. Several large breeding rookeries of waders occur on the property. In the center of Tract E, along Blackfish Bayou, buttonbush supports a large rookery with a large number of black-crowned night herons (*Nycticorax nycticorax*). Bald eagles (*Haliaeetus leucocephalus*) occur within the White Lake release area and will nest in large pine trees and forage in wetlands for fish and waterfowl.

Birds considered residents on the property include: boat-tailed grackle (*Quiscatus major*), barred owl (*Strix varia*), brown-headed cowbird (*Molothrus ater*), cattle egret (*Fubulcus ibis*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodia*), great egret (*Casmerodius albus*), killdeer (*Charadrius vociferous*), little blue heron (*Egretrta caerulea*), mourning dove (*Zenaida macroura*), northern cardinal (*Cardinalis cardinalis*), pied-bill grebe (*Podilymbus podiceps*), red-winged blackbird (*Agelaius phoeniceus*), roseate spoonbill (*Ajaia ajaja*), snowy egret (*Egretta thuls*), tricolor heron (*Egretta tricolor*), anhinga (*Anhinga anhinga*), and white ibis (*Eudocimus albus*).

The fresh marshes, levees, and agricultural lands provide a diverse habitat for a great variety of fish, mammals, birds, and amphibians. Fish commonly found on the property include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), crappie (*Poxomis nigromaculatus*), redear sunfish (*Lepomis punctuates*), alligator garfish (*Atractosteus spatula*), blue catfish (*Ictalurus furcatus*), channel catfish (*I. punctatus*), bullhead catfish (*I. sp.*), freshwater drum (*Aplodinotus grunniens*), warmouth (*Lepomis gulosus*), and yellowbass (*Morone mississippiensis*). Florida strain largemouth bass have been stocked into a 100-acre fish pond located in the northeast corner of Tract E. Red swamp crawfish (*Procambarus clarkii*) are abundant and marine organisms are seasonally abundant in the White Lake/Grand Lake system and under certain conditions move into the White Lake property.

Other resident wildlife include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), swamp rabbit (*Sylvilagus aquaticus*), nine-banded armadillo (*Dasypus novemlinetus*), striped skunk (*Mephitis mephitis*), river otter (*Lontra canadensis*), mink (*Mustela vison*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), muskrat (*Ondatra zibethicus*), and nutria (*Myocastor coypus*). Various species of frogs, snakes, and turtles occur on the area. The American alligator (*Alligator mississippiensis*) is abundant and supports egg collection and a commercial harvest.

At Rockefeller, the Gulf of Mexico shoreline provides habitat for the piping plover (*Charadrius melodus*), red knot (*Caladrius canatus*), and black skimmer (*Rynchops niger*). The Refuge hosts roughly 273 species of ducks, geese, coots, and shorebirds/wading birds in its extensive wetlands, and the Chenier ridges on the northern edge of the Refuge provide stopover habitat for neotropical migratory birds in the spring and fall. The pristine brackish saltmarsh in the uncontrolled drainage sections provides habitat for wintering waterfowl such as northern

shoveler (*Anas clypeata*), gadwall, and mottled duck. These salt marshes are also home to seaside sparrow (*Ammodramus maritimus*), clapper rail (*Rallus longirostris*), and diamondback terrapin (*Malaclemys terrapin*). Certain units at the Refuge have large populations of blue crab (*Callinectes spp.*), brown shrimp (*Panaeus astecus*), and white shrimp (*Pinaseus setiferus*). White trout (*Cynoscion arenarius*), black drum (*Pogonias cromis*), Atlantic croaker (*Micropogonias undulates*), and bay anchovy (*Anchoa mitchilli*) are commonly found there.

3.3.3 Disease

Progress has been made in showing the probable presence of Infectious Bursal Disease (IBD) in the Central Flyway. An IBD-like virus was isolated from an Aransas juvenile Whooping Crane that died at Aransas in February 2009. The U.S. Geological Survey's National Wildlife Health Center is studying this virus to classify it more exactly. Also, blood samples from sandhill cranes collected on the Platte River, Nebraska in March 2009 found that 12 of 19 had antibodies to IBD. It appears that cranes have been exposed to IBD in the Central Flyway and that whooping cranes have presumably been dealing with the IBD virus for a long time. Thus, it is unlikely that the translocation of whooping cranes among existing NEPs poses any significant risk to the Aransas whooping cranes in regard to transfer of IBD.

Both Sandhill and whooping cranes are also known to be vulnerable, in part or all of their natural range, to avian herpes (inclusion body disease), avian cholera, acute and chronic mycotoxicosis, eastern equine encephalitis (EEE), and avian tuberculosis. Additionally, *Eimeria* spp., *Haemoproteus* spp., *Leucocytozoon* spp., avian pox, and *Hexamita* spp. have been identified as debilitating or lethal factors in wild or pre-release, captive populations.

The Whooping Crane Health Advisory Team, group of crane veterinarians and disease specialists, have developed protocols for pre-release and pre-transfer health screening for birds selected for release to prevent introduction of diseases and parasites. Exposure to disease and parasites will be evaluated through blood, serum, and fecal analysis of any individual crane handled post-release, or at the regular monitoring interval. Remedial action will be taken to return to good health any sick individuals taken into captivity. Sick birds will be held in special facilities and their health and treatment monitored by veterinarians. Special attention will be given to EEE because an outbreak at the Patuxent Wildlife Research Center in 1984 killed seven of 39 whooping cranes present there. After the outbreak, the equine EEE vaccine has been used on captive cranes. In 1989, EEE was documented in sentinel bobwhite quail and sandhill cranes at the Patuxent Wildlife Research Center. No whooping cranes became ill, and it appears the vaccine may provide protection. EEE is present in Louisiana, so the released birds may be vaccinated. Other encephalitis diseases have not been documented as occurring or causing morbidity or mortality in cranes.

When appropriate, other avian species may be used to assess the prevalence of certain disease factors. This could mean using sentinel turkeys for ascertaining exposure probability to encephalitis or evaluating a species with similar food habits for susceptibility to chronic mycotoxicosis.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 *Alternative 1 - No action*

This section addresses the only environmental consequences we have identified associated with Alternative 1; accordingly, Alternative 1 will not be addressed further under the subsequent headings pertaining to environmental consequences.

Under the No Action alternative, the remaining Florida NEP whooping cranes would not be subject to translocation, and Whooping Crane recovery would be delayed while alternative recovery strategies were formulated and evaluated. The Florida population will inevitably be lost if nothing is done.

There are a number of risks that may not be mitigated in the No Action alternative. Throughout its range, the only existing natural flock of whooping cranes faces many factors that could reduce suitability of its habitat. In the region of the Canadian nesting area, mining operations could adversely affect water levels in the Wood Buffalo National Park nesting area. Acid rain may negatively affect the carrying capacity of this area for whooping cranes, and annual rainfall could change. This could reduce the carrying capacity of the nesting area and production of young, since production is directly correlated with water levels. In migration, whooping cranes face loss of wetland stopover habitat due to the continued loss of wetland habitat to agriculture and other development activities. As cranes and numerous other migratory bird species become concentrated in the remaining wetlands, there is an increased risk of disease adversely affecting the population. The increasing number of power lines, cellular towers, wind turbines and aircraft traffic all elevate the threat of collisions of cranes with these hazards.

At Aransas NWR, chemical spills along the Gulf Intracoastal Waterway are a constant threat. The human population along the Texas coast is growing rapidly. Human consumption of fresh water is projected to reduce freshwater inflows to bays in Texas which will result in reduction in the numbers of blue crab, the primary food of the whooping crane. Red tide outbreaks, that could be lethal to whooping cranes, have become more numerous in recent years. The red tide kills many marine organisms and concentrates in clams. Although the whooping crane population historically has grown about 4% a year, this growth rate is expected to decline in the future as threats to whooping cranes increase. In the 12 months following April, 2008, 21.4% of the wild flock died (57 birds), including 8.5 % of the wintering flock (23 birds) during the severe drought during the winter of 2008-09. If similar conditions occurred for several years, the whooping crane could easily go extinct in the wild. Introducing additional populations could reduce this risk.

The benefits of no action would be: (1) cost reduction due to the lack of operational expenses, (2) Reduced stress on the individual Florida whooping cranes in the absence of translocation, but at the expense of their long-term well-being (3) an opportunity to assess more fully other areas in the eastern U.S. for suitability as a release site and, (4) time to develop alternative recovery strategies. However, all marshes thought to be suitable for potential whooping crane reintroduction nationwide were already considered in the Recovery Team's recommendation to reintroduce cranes to Louisiana. Recovery strategies will continue to evolve as experiments are

evaluated. Progress toward recovery will be hindered in the absence of translocation.

We note that there are hazards associated with translocation. However, whooping cranes have been successfully translocated in the past and trained biologists will oversee the process. The option of No Action is unacceptable when the mandate of the Endangered Species Act, to protect and recover endangered species, is considered. The most compelling reason implementing the translocation of whooping cranes among NEPs is the tenuous situation of the only natural, wild, self-sustaining whooping crane population which could be eradicated by any one of several possible catastrophic events. Due to the survival and reproductive issues faced by the Florida non-migratory flock, it is extremely unlikely that reproduction in wild-hatched Florida whooping cranes will ever achieve production rates adequate for success. Dependent upon overcoming the reproductive issues, the Eastern Migratory Population has the potential to become the second self-sustaining, wild population needed to move toward recovery. The support of a wild, self-sustaining non-migratory flock in south Louisiana is a recovery priority, and has been since reintroduction efforts began in 2011. In 2016, the Whooping Crane Recovery Team reaffirmed their ongoing support for the proposed translocation of cranes among NEPs, to meet the Recovery Plan goals of establishing two additional self-sustaining populations beyond the existing wild migratory AWBP population.

4.2 *Alternative 2 -Remove whooping cranes from a discontinued NEP in central Florida and place them in captivity.*

In order to implement Alternative 2, it is necessary to assess the consequences of placing wild NEP cranes in captivity. Additionally, the reduced wild presence of whooping cranes and consequent decrease in wild-breeding opportunities is also a consideration. Removal of the Florida cranes from their wild range would eliminate all opportunities for breeding in the wild. Furthermore, wild whooping cranes are not always adaptable to life in captivity. A potential benefit of placing wild whooping cranes in captivity is the opportunity to enhance the quality of breeding stock genetics; however, biologists at the Service have determined the whooping crane genetics in captive breeding already well developed and not in need of such augmentation from the Florida NEP.

4.3 *Alternative 3 - (Preferred Alternative) – Remove whooping cranes from a discontinued NEP in central Florida in order to support a more successful NEP in southwestern Louisiana*

Alternative 3 is the removal of whooping cranes from a discontinued NEP in central Florida in order to support a more successful NEP in southwestern Louisiana. There are no negative biological consequences to this action; aside from potential stress caused by capturing and transporting whooping cranes long distances, and there are no anticipated negative effects on the birds. By translocating the 14 Florida cranes to Louisiana, the Service, the Florida FWC, and LDWF intend to support this population's long-term viability and contribution to the overall recovery effort. Because translocation from Florida to Louisiana will be the first implementation of this strategy, this section analyzes potential effects on the release site in southwestern Louisiana. Florida cranes would benefit from integration with an actively managed and

monitored NEP through the enhanced opportunity for reproductive success, which is diminished in Florida due to discontinued reintroduction efforts.

4.3.1 Physical Characteristics

The physical characteristics of the potential or future release sites are anticipated to remain intact as a result of implementation of the preferred alternative. With the exception of limited areas impacted by construction and use of soft release pens and observation blinds, no detectable effects on vegetation within the release area are expected as a result of implementation of the preferred alternative.

4.3.2 Biological Environment

No effects are expected upon the biological characteristics of the potential release site or proposed nonessential experimental population area because of implementation of the preferred alternative.

4.3.2.1 Vegetation

In general, the translocation of the Florida whooping cranes to Louisiana is not expected to have adverse effects on vegetation at release sites. No detectable effects on vegetation within the release area are expected as a result of implementation of the preferred alternative, because the cranes in question will be already suited to survival in the wild. They will likely disperse quickly after release and will not be contained in a pen. In the event that they do need to be kept in a pen, refer to the 2011 Environmental Assessment concerning the establishment of the Louisiana NEP for potential impacts. No detectable changes have been observed in the southwest Louisiana landscape over the previous five years, indicating that release of whooping cranes here and at future release sites will have minimal impact on the vegetation.

4.3.2.2 Threatened, Endangered, and Candidate Species

No effects are expected to any of the threatened, endangered, or candidate species that occur in Florida or Louisiana as a result of implementation of the preferred alternative. No listed species occur within the proposed release area. Listed species that occur in adjacent southwest Louisiana habitats include: piping plovers, manatees, and sea turtles. Brown pelicans and bald eagles are recovered and delisted, and the proposed reintroduction is not expected to have an adverse impact on either of these species.

4.3.2.3 Other Wildlife Species

Knowledge of foods and feeding behavior of the whooping crane in other parts of its range do not suggest any obvious sources of competition with any of the residents or migrant species found in the proposed release area, or any appreciable adverse effects to potential prey populations. In addition, there is potential risk of predation on adult cranes by alligators, coyotes and bobcats, and on chicks by great horned owls, raccoons and red fox.

4.3.2.4 Disease

Cranes are not known to be important vectors of any diseases likely to pose a high level of risk to other wildlife species. Based upon post-release monitoring of whooping cranes in the ongoing Florida and Eastern Migratory Population reintroductions, any cranes released could be expected to carry the same general types and levels of pathogens as do other local wildlife species.

Captive whooping cranes have been known to carry certain pathogens which could have substantial adverse effects on wild crane populations. However, any birds released as part of a reintroduction effort would be screened for such diseases, and treated to ensure a low level of risk for disease transmission. Whooping cranes released in Florida underwent a 60-day quarantine period prior to release (FWC, 2001). The Eastern Migratory Population of whooping cranes undergo a health screening prior to shipment from the rearing facility at Patuxent Wildlife Research Center, upon arrival in Wisconsin, and upon arrival in Florida. In this proposed project, the young cranes also will go through a similar series of health checks prior to release and at the time of any capture during the project.

4.3.3 Land Use

No effects are expected upon the land use characteristics of the release sites, or southwestern Louisiana NEP area as a result of implementation of the preferred alternative.

4.3.3.1 Agriculture, Aquaculture, Oil and Gas, Industrial Use, and Land Management

Special regulations pertaining to the NEP designation would allow incidental take of an individual in situations where the take is accidental and occurs as a result of otherwise lawful activities, when such activities are in full compliance with all applicable laws and regulations. The exceptions regarding incidental take included in the special rule that designates the NEP ensures that reintroduction would be compatible with current or planned human activities including agriculture or other business operations. However, operations in the area may voluntarily schedule management actions to avoid adverse impacts to cranes using their properties. Visual deterrent devices may be recommended for some transmission lines depending upon habitat use by the cranes. This measure could increase costs at an undetermined level.

The augmentation of a population of whooping cranes will not negatively affect the current socioeconomic situation. Releasing whooping cranes into southwestern Louisiana will be implemented in a manner that allows continuing multiple-use management on public land and should not negatively affect private landowners' lifestyles or income potential, for the following reasons:

(A). The "nonessential experimental population" designation allows the Service to devise the most flexible management program possible under ESA for the reintroduced population of whooping cranes in order to accommodate landowners' and land managers' concerns.

(B) The whooping crane management program is compatible with existing ranch, livestock, agricultural operations, and oil and gas exploration and extraction so that neither lifestyles nor income potential are negatively affected.

One potential concern of expanding the Louisiana NEP is the tendency of some cranes to fly into Texas. A number of cranes from the 2012 cohort return to the Dallas area every year, and in 2015, four birds from the 2014 cohort spent an extended amount of time near Beaumont, TX, before returning to Louisiana. Once in Texas, whooping cranes are no longer subject to NEP classification, and treated as endangered; they receive the same protection under the ESA as the wild remnant population that winters along the Texas gulf coast. This distinction may increase restrictions on certain agricultural activities due to the presence of the endangered birds. Cranes nest during a period lasting from late April until early July; nesting season coincides with the drawdown of crawfish ponds and subsequent rice production. In such areas, the presence of endangered species during the nesting period may pose a concern for rice and crawfish farmers. In Louisiana, the Service and LDWF are working with landowners to enroll in NRCS cost-sharing programs to support the inundation of crawfish ponds through the whooping crane nesting season. Similar outreach will be useful in Texas to mitigate any impacts on agriculture. Landowner outreach is simplified by the fact that cranes tend to return to the same sites year after year.

4.3.3.2 Residential Use

No detectable effects to residential use in southwestern Louisiana are expected as a result of whooping crane augmentation. No additional restrictions on construction or establishment of residences would be associated with reintroduction efforts.

4.3.3.3 Recreational use

In general, recreation values at whooping crane release sites are expected to increase, as a result of the public interest in viewing this species in the wild. Existing recreational values within the project area in Louisiana would remain, and may be enhanced after the augmentation of the whooping crane population. Management plans for the WLWCA and other public land may be modified to benefit whooping cranes and allow reasonable public access to the cranes in non-sensitive locations and time intervals. Currently in Louisiana, snow geese are the only target species which appear similar to whooping cranes. In the event the sandhill crane becomes a game species, it is not likely there would be any additional restrictions imposed as a result of the presence of whooping cranes. According to the special rule establishing the Louisiana non-migratory NEP, the Service would not mandate any closure of areas, including National Wildlife Refuges, during hunting or conservation order seasons or closure or modification of hunting or conservation order seasons for the purpose of avoiding take of the proposed nonessential experimental population.

Access to some limited areas associated with release sites could be temporarily restricted at times when whooping cranes might be particularly vulnerable to human disturbance (i.e., around the gentle release/conditioning pens in the fall/winter). Any temporary restricted access to areas for

these purposes would be of the minimum size and duration necessary for protection of the NEP. Any such access restrictions would not require Federal closure of hunting areas or seasons, although hunting might be restricted by limiting access in the immediate vicinity of the release site.

Louisiana and LDWF will maintain management prerogatives regarding the whooping crane. They are not directed by the proposed rule to take any specific actions to provide special protective measures, nor are they prevented from imposing restrictions under state law, such as protective designations, area closures, etc. LDWF has indicated that they would not propose hunting restrictions or closures related to game species because of the proposed whooping crane reintroduction. Overall, the presence of whooping cranes is not expected to place constraints on hunting of wildlife, nor on economic gain landowners might receive from hunting leases.

The presence of whooping cranes in some wetland areas is not likely to place constraints on fishing activity. Most whooping crane nesting is expected to occur in emergent marshes. Therefore, no appreciable limitation on fishing activity and no reduction in economic activity associated with sport fishing is expected.

The number of people visiting the release area for birding and wildlife viewing is expected to change as whooping cranes increase in number with the augmentation. Birders would be attracted to these areas to view the whooping cranes and other unique local bird life. These visitations may eventually provide an increase in recreation income to local service industries. Such changes would benefit the local economy. Controlled opportunities for the public to view whooping cranes from a distance may be developed. Tour routes and accessible viewing blinds/towers are options the LDWF or the Service may consider for providing controlled viewing opportunities.

4.3.3.4 Water Usage

No major effects on water usage by either private or government entities are expected as a result of this action. White Lake and other nearby public lands may consider minor modifications to water level management regimes to improve crane habitat as a result of this action, but the actual amounts of water used are not expected to change, and no adverse effects on water availability to private entities is anticipated. As a result of provisions of the rule to designate the Louisiana non-migratory NEP of whooping cranes, no non-Federal entities would be obligated to manage for the species, so there would be no mandated changes to water management on other properties.

4.3.3.5 Cultural/Paleontological Resources

No adverse effects on existing archaeological resources are expected to result from the translocation project. LDWF conducted a screening of local archaeological resources for the location of the proposed gentle release pen at WLWCA. In the event that releases are conducted at any additional areas, any soil disturbance activities would be screened for possible effects to archaeological resources prior to any actual construction, and site location would be adjusted to avoid impacts.

4.3.3.6 Local Socio-economic Conditions

The region would receive greater, but undetermined, revenues from additional tourism activities associated with whooping cranes. Birders throughout the U.S. would have a great desire to view the species, and would likely contribute to the local service economy, spending money in motels, restaurants and stores. Substantial income is generated from the influx of visitors who go to see whooping cranes near Rockport, Texas, where the self-sustaining wild population winters. The visitation at Necedah National Wildlife Refuge in Wisconsin and at St. Marks National Wildlife Refuge in Florida has significantly increased since the establishment of the Eastern Migratory Population of whooping cranes. The annual spring viewing of cranes along the Platte River in Nebraska also generates economic benefits from enthusiastic birders (Lingle 1992). A similar, localized economic benefit could develop around the Louisiana population. The public could possibly be provided the opportunity to view the whooping cranes from a distance (from accessible blinds, towers, or tour routes) without jeopardizing the cranes.

Augmenting the reintroduction of whooping cranes into Louisiana would be implemented in a manner that allows continuing multiple-use management on public land and should not negatively affect private landowners' lifestyles or income potential. The nonessential experimental population designation for the proposed Louisiana non-migratory population accommodates the concerns of landowners and land managers. Only the Service refuge lands and the National Park Service, on lands it manages, would be required to undergo Section 7 consultations if their actions might affect whooping cranes. Other Federal agencies would not be required to conduct formal consultation on preferred alternatives that might adversely affect whooping cranes.

No significant or adverse effects are expected on small private entities. Privately-owned tracts surrounding the potential release area are in a rural setting. Agriculture, aquaculture, livestock, oil and gas exploration/extraction and recreational hunting are the main land uses. The proposed releases would not interfere with land management options of private landowners nor with their ability to realize economic gain from their properties, including development for residential use. The NEP designation for the Louisiana whooping cranes permits greater management flexibility.

Greater sandhill cranes have been a part of the natural scene in Louisiana in recent years, utilizing wetlands and upland pastures. Their feeding, roosting, and general behavior patterns are similar to the activities likely to be observed in whooping cranes, although the whooping cranes are likely to utilize slightly deeper wetland areas. Whooping cranes may utilize improved pastures to probe for invertebrates. This action aerates the soil and removes insects potentially damaging to plant root health. There is evidence that sandhill cranes sometimes cause damage to emerging corn; whooping cranes may engage in similar activities. If such depredations occur they can be reduced through use of bird scaring devices and other techniques. Ongoing research on seed treatments as a deterrent to corn depredation is promising (Blackwell et al., 2001). Whooping cranes will not enter standing grain fields because of their vulnerability to predators and difficulty gaining flight. Whooping cranes will feed along the borders of such fields and, if large flocks occurred they could cause some crop damage. However, whooping cranes are socially less gregarious than sandhill cranes and, therefore, are less likely to cause any

appreciable crop depredation. The augmentation of a population of whooping cranes is not expected to negatively impact the current socioeconomic situation at the proposed release areas in Louisiana.

5.0 CONSULTATION AND COORDINATION WITH OTHERS

The International Whooping Crane Recovery Team, the U.S. Fish and Wildlife Service, the LDWF, and the FL FWC are all involved in this whooping crane recovery effort. Decision making in this species recovery is the result of consultation and coordination among these agencies. LDWF staff working in southern Louisiana observe the NEP there on a daily basis, and believe that additional releases would be beneficial. It is also the opinion of scientists working on the Florida NEP that the remaining cranes there will not survive. The action of translocating the remaining Florida cranes to the Louisiana NEP is proposed based on the cooperation of these stakeholders.

6.0 COMPLIANCE WITH LAWS, REGULATIONS AND POLICIES

This Environmental Assessment was prepared in accordance with the National Environmental Policy Act of 1969. It is consistent with the policy contained in the Service's manual (550 FW 3), and employs a systematic, interdisciplinary approach. The proposed project has been reviewed for compliance with other Federal and state requirements including but not limited to, the Endangered Species Act of 1973, as amended; Archeological and Historic Preservation Act of 1974; National Historic Preservation Act of 1966, as amended; Executive Order 11988 (Floodplain Management); and Executive Order 11990 (Protection of Wetlands). Full compliance with relevant laws and regulations will be achieved upon review of this Environmental Assessment by appropriate agencies and interested parties, and the signing of a Finding of No Significant Impact and Environmental Action Statement.

The Executive Order 12898 on Environmental Justice issued on February 11, 1994, requires all Federal agencies to assess the impacts of Federal actions with respect to environmental justice. The Executive Order states, to the extent practicable and permitted by law, neither minority nor low-income populations may receive disproportionately high and adverse impacts as a result of a proposed project. Due to the rural nature of the reintroduction sites in southwestern Louisiana, the surrounding population tends to be in lower income categories, but no identifiable group of individuals can be considered to have lower income in relation to local averages. None of the potential reintroduction areas have any known concentrations of minority populations in the vicinity of the proposed release site. The impacts of Alternatives 2 and 3 on human activities in the areas surrounding reintroduction sites are expected to be minimal, and so do not represent any disproportionate high and adverse impacts to low-income and minority groups.

7.0 PREPARERS

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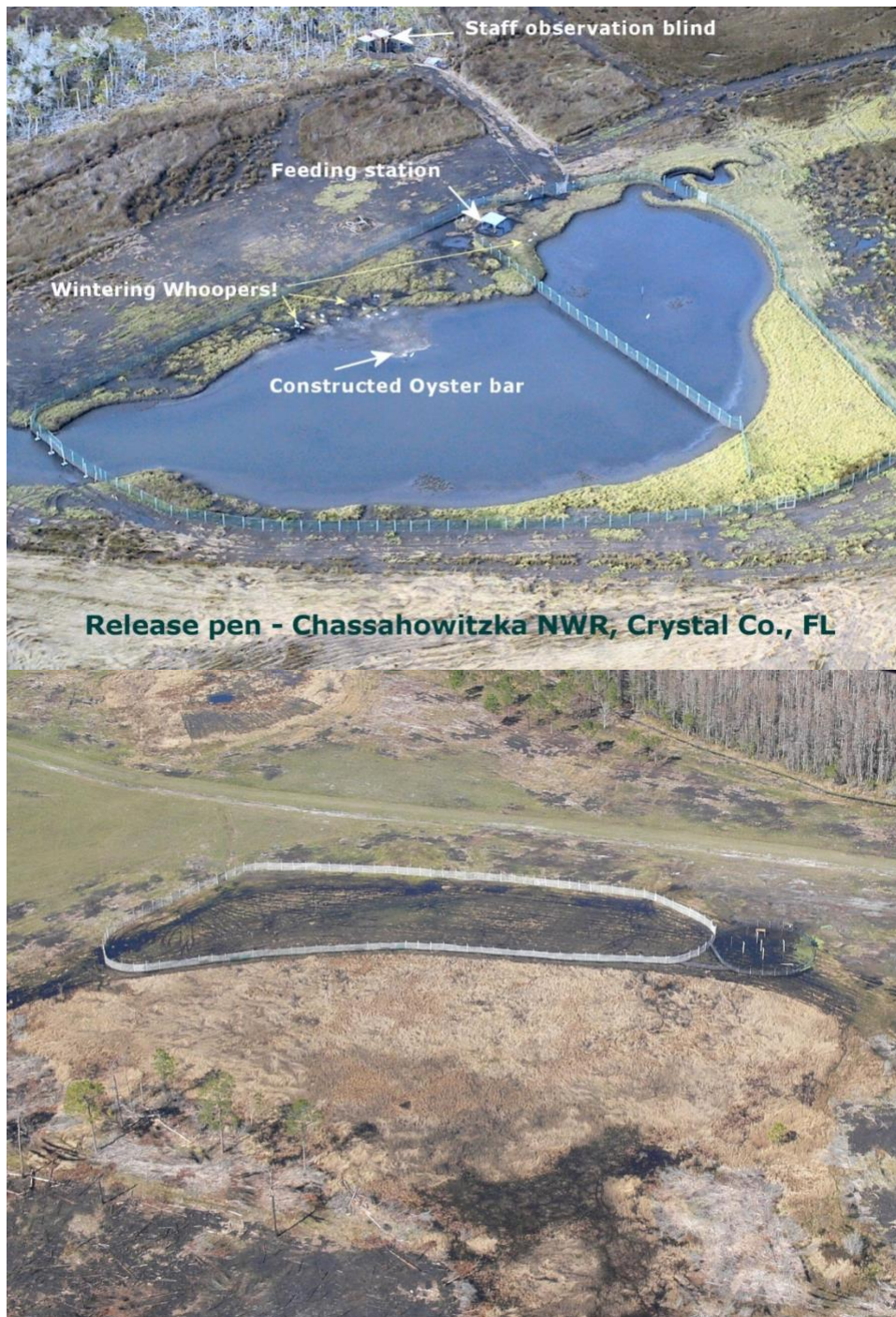
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Appendix 1. Photographs of gentle release pens





LDWF Soft Release Pen at White Lake Wetlands Conservation Area, Louisiana



LDWF temporary holding pen at White Lake Wetlands Conservation Area, Louisiana

Appendix 2. Whooping Crane Recovery Coordinator Central Flyway Briefing Paper

PROPOSED LOUISIANA WHOOPING CRANE REINTRODUCTION: FLYWAY BRIEFING PAPER. Tom Stehn 1-30-09

WHAT IS BEING PROPOSED: A reintroduction to establish a nonmigratory flock of whooping cranes within their historic breeding area of southwestern Louisiana.

WHO IS INVOLVED: The Canada/United States Whooping Crane Recovery Team has recommended moving forward with the reintroduction. The Regional Directors of USFWS Regions 2 and 4 have been briefed on this recommendation and are supportive. The Louisiana Department of Wildlife and Fisheries is the lead on releasing and monitoring reintroduced whooping cranes and is very enthusiastic and supportive of the project.

WHAT IS THE GOAL OF THE PROJECT: The goal of the reintroduction is to establish a self-sustaining flock of 25-30 breeding pairs of whooping cranes (approximately 100 to 120 birds).

WHAT IS THE PURPOSE OF THE REINTRODUCTION: The whooping crane recovery plan identifies the need for three self-sustaining wild populations—consisting of 40 nesting pairs in the Aransas-Wood Buffalo Population (AWBP) and two additional, separate and self-sustaining, populations consisting of 25 nesting pairs each—to be in existence before the whooping crane can be reclassified as “threatened”. The two additional populations may be migratory or non-migratory. Population targets are 160 in the AWBP, and 100 each in other populations. All three populations must be self-sustaining for a decade at the designated levels before downlisting could occur. If only one additional wild self-sustaining population is re-established, then the AWBP must reach 400 individuals (i.e. 100 productive pairs), and the new population must remain above 120 individuals (i.e. 30 productive pairs).

WHEN COULD THIS TAKE PLACE: The initial release of 4-8 birds could take place in the 2010-2011 winter. If results of this initial proposed release are favorable, releases will be continued with the goal of releasing up to 30 whooping cranes annually for about 10 years.

WHERE THE RELEASE WOULD TAKE PLACE: The initial release would be done at the 70,970-acre White Lake Wetlands Conservation Area (WLCA) south of Gueydan, Vermillion Parish in southwestern Louisiana. WLCA encompasses part of the area historically occupied by a nonmigratory, breeding population of whooping cranes that was extirpated by 1950.

WHAT METHODS WOULD BE USED: Whooping crane juveniles would be isolation-reared at captive breeding centers and then soft-released to hold and acclimate birds at White Lake during their first winter. Techniques used would be similar to the nonmigratory whooping cranes released in central Florida. Intensive monitoring would be done by project personnel, including tagging with radio and GPS solar-powered satellite transmitters, to discern movements, habitat use, other behavior, and survival.

LEGAL ISSUES: A 10(j) rule is being drafted to designate all nonmigratory whooping cranes in Louisiana as nonessential experimental and should be available for public comment sometime after mid-February. The proposed rule will be coordinated with potentially affected State and Federal agencies, private landowners, and the general public.

GEOGRAPHIC AREA OF THE 10(j) RULE: On private lands, both migratory and nonmigratory whooping cranes in Louisiana would be considered as nonessential experimental. The existing 10(j) rule for the eastern migratory population makes any whooping crane in the eastern states of AL, AR, FL, GA, IA, IL, IN, KY, LA, OH, MI, MN, MO, MS, NC, SC, TN, VA, WV, WI, treated as nonessential experimental (NEP). If any of these whooping cranes cross into the Central Flyway or into the New England States, they are treated as “endangered” regardless of their captive origin.



IMPACT OF THE NEP RULE: On private lands, the whooping cranes in Louisiana would not be considered as “endangered”. Current human activities would not be disrupted by the reintroduction. These are the same conditions afforded the eastern migratory whooping cranes designed to not affect the daily activities or monetary income of people. The principal activities on private property adjacent to the release area are agriculture, aquaculture, oil and gas exploration and extraction, and recreation. Use of these private properties by whooping cranes will not preclude such uses. The proposed special regulation accompanying this proposed rule authorizes incidental take of the whooping crane in the proposed NEP area when the take is accidental and incidental to an otherwise lawful activity.

There will be no federally mandated hunting area or season closures or season modifications put in place in the NEP area to protect whooping cranes. Accidental shooting of a whooping crane in this experimental population during the course of otherwise lawful hunting activity is exempt from take restrictions under the Act in this proposed special regulation. Applicable Federal penalties under the Migratory Bird Treaty Act and/or State penalties, however, may still apply. The LDWF will minimize mortality due to accidental shootings by providing educational opportunities and information to hunters to assist them in distinguishing whooping cranes from other legal game species.

EXPECTED RESTRICTIONS: Human access may be temporarily restricted in limited areas including release pen facilities and at nests to minimize disturbance at times of greatest

vulnerability. Any temporarily restricted access to these areas will be of the minimum size and duration necessary for protection of the proposed NEP cranes, and will be at the discretion of the Louisiana Department of Wildlife and Fisheries. It will not require Federal closure of hunting areas or seasons.

EXPECTED CRANE MOVEMENTS: Since migration in cranes is a learned rather than an innate behavior, captive-reared whooping cranes released in Louisiana will likely adhere to their release area and be concentrated at WLCA in Vermilion Parish. Expected dispersal within the NEP area may include areas in Calcasieu, Jefferson Davis, and Cameron Parishes. In Florida, nonmigratory whooping cranes commonly moved 50 to 75 miles from a release site. Almost all reintroduced whooping cranes are expected to remain in Louisiana. However, one pair of whooping cranes from the Florida flock traveled to Illinois and Michigan during the severe drought of 2000 and a second pair dispersed to Virginia, but surviving members of the pairs all returned to the core reintroduction area in Florida. An article that details movements of Florida nonmigratory whooping cranes can be provided in a separate document. Given the abundance of marsh habitat available to the cranes compared to limited wetland habitats in Florida, whooping cranes released in Louisiana are expected to show less dispersal than the cranes in Florida. Section 10(j) of the Act requires that an experimental population be geographically separate from other populations of the same species. Whooping cranes released in southwest Louisiana are not expected interact with the AWBP flock along the Texas coast as Aransas NWR is approximately 285 miles southwest of the proposed release area.

PROPOSED MANAGEMENT ACTIONS IF LOUISIANA WHOOPING CRANES

WANDERS OUT OF THE NEP AREA: We anticipate only the rare instance when a Louisiana whooping crane would stray outside of the 20 NEP states. If a nonmigratory Louisiana whooping crane strays, the same protocol used for the eastern migratory whooping cranes will be implemented, namely

- a) immediately consult with the state where the whooping cranes are located,
- b) if requested by the state, try to capture and remove the whooping cranes.
- c) if there is a significant chance of mixing of the stray whooping cranes with those of the Aransas-Wood Buffalo flock, then try to capture and remove the cranes.
- d) if there is no significant chance of mixing and the cranes are not hindering human activities, then allow the whooping cranes to remain and let them go back to Louisiana on their own which has always happened in the case of the Florida nonmigratory whooping cranes.

Birds from the AWBP flock have never been observed in Louisiana. It is not acceptable to the Recovery Team for captive-bred whooping cranes to mix with those of the Aransas-Wood Buffalo flock. If the movement of a few Louisiana cranes occurs more than occasionally into the Central Flyway, then the reintroduction will be reassessed.